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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAKOTO TOMIOKA and HIROSHI TSUYUKI

Appeal 2009-003655¹
Application 09/893,677
Technology Center 2600

Decided: August 20, 2009

Before KENNETH W. HAIRSTON, JOHN C. MARTIN, and
BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.

MARTIN, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The real party in interest is Olympus Optical Co., LTD. Br. 1.

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-18, which are all of the pending claims.²

Oral argument was held on August 12, 2009.³

We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

A. Appellants' invention

Appellants' invention is a rigid video-endoscope system used in the surgical field. Specification 1:4-5.

Appellants' Figure 3 is reproduced below.

² As noted at page 3 of the Answer, claim 19, which was rejected in the Final Action, has been canceled. Also, the Examiner (Answer 3) has withdrawn a rejection of claim 1 under 35 U.S.C. § 112, second paragraph, given at pages 2-3 of the Final Action.

³ A transcript of the oral argument will be added to the record in due course.

FIG. 3

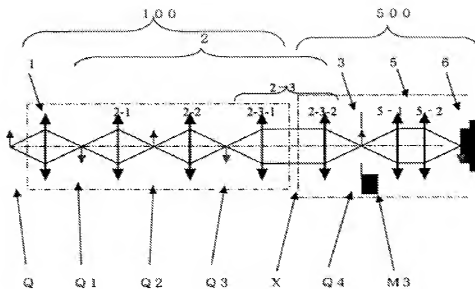


Figure 3 is a schematic view showing a basic construction of Appellants' invention. *Id.* at 8:22.

As shown in Figure 3, the rigid video-endoscope system comprises a front-end insertion section 100 and a detachable camera head 500. *Id.* at 10:1-2. The front-end insertion section 100 comprises, in order from its distal end side or object side, an objective lens 1, a first relay lens 2-1, a second relay lens 2-2, and a front half section 2-3-1 of a third relay lens 2-3. *Id.* at 10:3-5. The camera head 500 comprises a rear half section 2-3-2 of the third relay lens 2-3, an imaging lens 5 including two lens sections 5-1, 5-2, a view field mask 3 disposed between the rear half section 2-3-2 and the imaging lens, and a solid-state image sensor 6. *Id.* at 10:5-8. While each lens is simply represented by an arrow, each may be composed of one or plurality of lenses. *Id.* at 10:8-9.

B. The claims

The only independent claim before us is claim 1, which reads:

1. A rigid video-endoscope system including a front-end insertion section and a camera head, said rigid endoscope system comprising:

an objective optical system that forms an image of an object, a relay optical system that includes a plurality of lens units and relays the image formed by the objective optical system, an imaging optical system that forms an image of the relayed image and a solid-state image sensor that receives the image formed by the imaging optical system, and

wherein said camera head includes a part of said relay optical system, said imaging optical system and said solid-stage [sic] image sensor, and

the relayed image is formed between the relay optical system and the imaging optical system in the camera head, and

wherein said front-end insertion section includes the objective optical system and a remaining part of the relay optical system; and

the insertion section and camera head are detachable.

C. The references and rejections

The Examiner relies on the following references:

Takahashi et al. (Takahashi)	US 5,588,948	Dec. 31, 1996
Igarashi (Igarashi '232)	US 5,902,232	May 11, 1999
Igarashi (Igarashi '634)	US 5,954,634	Sep. 21, 1999

Claims 1 and 3-18 stand rejected under 35 U.S.C. § 103(a) for obviousness over Igarashi '232 in view of Takahashi.

Claim 2 stands rejected under § 103(a) for obviousness over Igarashi '232 in view of Takahashi and Igarashi '634.

Because claims 3-5 depend on claim 2, we will treat claims 3-5 for purposes of analysis as rejected over the prior art applied against claim 2.

THE ISSUE

Appellants have the burden on appeal to show reversible error by the Examiner in maintaining the rejection. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness." (citation omitted)).

The principal issue raised by Appellants' arguments is whether Takahashi discloses or suggests providing a portion of a relay optical system in the insertion section and providing the remainder of the relay optical system in the camera head.

THE REJECTION BASED ON IGARASHI '232 AND TAKAHASHI

Igarashi '232 discloses a non-flexible (i.e., rigid) endoscope for use in the medical field. Igarashi '232, col. 1, ll. 9-10.

Figure 3, on which the Examiner relies (Final Action 3), is reproduced below.

FIG. 3

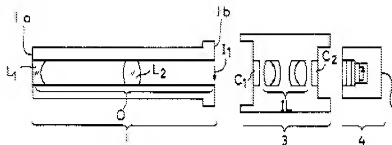


Figure 3 shows an embodiment of an endoscope which is used for TV monitoring. *Id.* at col. 8, ll. 41-42. Insert section 1 is equipped with an adaptor 3 for use in an imaging device, such as a TV camera adaptor, and an imaging device 4, such as a TV camera. *Id.* at col. 8, ll. 42-46. Insert section 1 is detachable from TV camera adaptor 3. *Id.* at col. 8, ll. 61-64.

Figure 12, on which the Examiner also relies (Final Action 3), is reproduced below.

FIG. 12

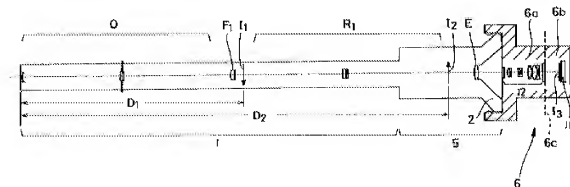


Figure 12 is a sectional view illustrating an optical system for an embodiment of the non-flexible endoscope that comprises a relay lens system. *Id.* at col. 5, ll. 21-23.

Insert section 1 includes an objective lens system O that is disposed in the leading end thereof, a primary field lens F₁ that is disposed in the vicinity of a primary image I₁ formed by the objective lens system O, and a relay lens unit R₁ that serves for relaying the primary image I₁ so as to form a secondary image I₂. *Id.* at col. 18, ll. 14-20. Grip section 5 includes an eyepiece lens system E that converts rays coming from the secondary image I₂. *Id.* at col. 18, ll. 20-23. Attached to the eyepiece section 2 is a TV camera system 6 that is configured as a separate unit and comprises a solid-state image pickup device 11 and an imaging lens system IL. *Id.* at col. 18, ll. 24-27.

The Examiner found that Igarashi '232 fails to disclose (a) providing part of the relay optical system in the "camera head" (Final Action 4), which term we assume the Examiner is reading on TV camera system 6, and (b) providing the remainder of the relay optical system in insertion section 1. To cure these deficiencies, the Examiner relies on Figures 1 and 2 of Takahashi. *Id.*

Takahashi discloses a stereoscopic endoscope which is used for stereoscopic observation of objects. Takahashi, col. 1, ll. 7-8.

Figure 1 of Takahashi is reproduced below.

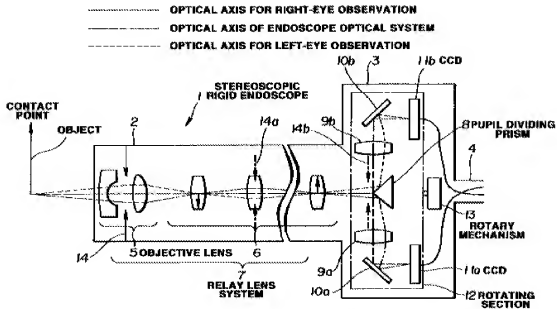


FIG.1

Figure 1 shows the construction of a stereoscopic rigid-type endoscope according to a first embodiment. *Id.* at col. 3, ll. 17-19. In this figure, numeral 2 designates the “inserting section” and numeral 3 designates the “operating/holding section.” *Id.* at col. 4, ll. 7-12. Inserting section 2 contains a relay lens system 7 comprising an objective lens system 5 and a “relay lens section 6” that is shown having three lens groups. *Id.* at col. 4, ll. 14-22. We agree with Appellants that the Examiner erred in finding that “as seen in figure 1, the endoscope system comprises a set of three lenses 6, two being in the inserting section and one being in the camera head.” Answer 6-7.

Figure 2 of Takahashi is reproduced below.

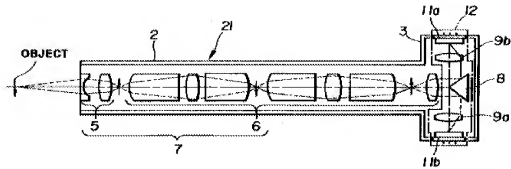


FIG.2

Figure 2 is described as “show[ing] the construction of another stereoscopic rigid-type endoscope according to the first embodiment.” Takahashi, col. 3, ll. 20-21. This brief description constitutes the only discussion of Figure 2 in Takahashi. A comparison of Figures 1 and 2 reveals several differences, of which the difference most relevant to the rejection is that Figure 2 shows one of the lenses that forms relay lens section 6 located inside operating/holding section 3, which additionally includes a rotating section 12 that houses a prism 8, image forming lenses 9a, and 9b, and CCDs 11a and 11b. *Id.* at col. 4, ll. 51-52.

Although not relied on by the Examiner, Takahashi’s Figure 14 appears to be more relevant to the claimed invention than does Figure 2. Figure 14 is reproduced below along with Figures 13(a) and (b).

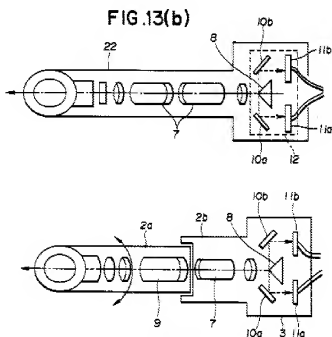
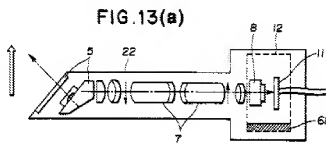


FIG.14

Figures 13(a) and (b) show the construction of a stereoscopic rigid-type endoscope according to a fourth embodiment, while Figure 14 shows the construction of a stereoscopic rigid-type endoscope according to a fifth embodiment. *Id.* at col. 3, ll. 48-53.

For the following reasons, we find that claim 1 reads on the Figure 14 embodiment, which includes a front insertion section 2a that is rotatable

with respect to the combination of rear insertion section 2b and operating/holding section 3. *Id.* at col. 9, ll. 49-52. Based on a comparison of the Figure 14 embodiment with the embodiment depicted in Figures 13(a) and (b), which show a relay lens system 7 consisting of two lenses each numbered “7,” it appears that lenses 7 and 9 in Figure 14 likewise form a relay lens system.⁴ Furthermore, nothing in the language of claim 1 prevents the recited “front-end insertion section” from being read on Takahashi’s front insertion section 2a (including relay lens 9) or the recited “camera head” from being read on rear insertion section 2b (including relay lens 7) in combination with operating/holding section 3, thereby satisfying the requirement of claim 1 that the “camera head” include a part of said relay optical system and that the “front-end insertion section” include the remaining part of the relay optical system.

The rest of the limitations of claim 1 are also expressly or inherently satisfied by the Figure 14 embodiment. A comparison of Takahashi’s Figures 1 and 14 suggests that the unnumbered lenses to the left of relay lens 9 in Figure 14 include an objective lens and that the unnumbered lens located between relay lens 7 and mirrors 10a and 10b is an imaging lens. Finally, because relay lens 7 is located inside the camera head, the relayed image generated by relay lenses 7 and 9 necessarily will be generated in the camera head between relay lens 7 and the imaging lens, as required to satisfy claim 1.

⁴ Reference numeral 9 is not mentioned in Takahashi’s specification.

The rejection of claim 1 for obviousness over Igarashi '232 in view of Takahashi is therefore affirmed. Note that in sustaining a multiple-reference rejection under 35 U.S.C. § 103(a), the Board may rely on one reference alone without designating the affirmance as a new ground of rejection. *In re Boyer*, 363 F.2d 455, 458 n.2 (CCPA 1966) (citing *In re Bush*, 296 F.2d 491, 496 (CCPA 1961)).

For the foregoing reasons, we are also affirming the rejection of dependent claims 6-18, which are not separately argued. *In re Nielson*, 816 F.2d 1567, 1572 (Fed. Cir. 1987).

THE REJECTION BASED ON IGARASHI '232,
TAKAHASHI, AND IGARASHI '634

Claim 2, on which claims 3-5 depend, reads as follows:

2. A rigid-endoscope as defined in claim 1, wherein said camera head including a view field mask, wherein said view field mask, said imaging optical system and said solid-state image sensor are constructed to be integrally moved along the optical axis in a focusing operation.

The Examiner's position is as follows:

Igarashi (US 5,902,232) teaches the movements of a visual field mask and the imaging optical system for a focusing operation, but he fails to teach the movements of the imaging sensor. Although Igarashi (US 5,902,232) and Takahashi et al. (US 5,588,948) fail to teach this, Igarashi (US 5,954,634) does (Igarashi: Column 4, lines 57-67). Since the difference between integrating the imaging sensor with the movements of the visual field mask and the optical system could just be the difference of focusing or magnification it would have been obvious to one of

ordinary skill that the separate or integrated imaging sensor would achieve the same results.

Final Action 6. In the Answer, the Examiner further explained that “Igarashi ‘634 discloses in column 4, lines 52-67, moving the image sensor.”

Answer 9.

Appellants’ criticism of the rejection of claim 2 reads in its entirety as follows:

It is respectfully submitted that none of the applied references disclose or fairly suggest, singly or in combination, the features of claim 2 concerning *wherein said camera head including a view field mask, wherein said view field mask, said imaging optical system and said solid-state image sensor are constructed to be integrally moved along the optical axis in a focusing operation.*

Br. 10. This assertion does not constitute an argument on the merits, because “[a] statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim.” 37 C.F.R. § 41.37(c)(1)(vii) (2006).

The rejection of claim 2 is therefore affirmed, as is the rejection of its dependent claims 3-5, which are not separately argued.

DECISION

The Examiner’s rejections of claims 1-18 under 35 U.S.C. § 103(a) for unpatentability over the prior art are affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136. *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

babc

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